

Australian Capital Territory

# Nature Conservation (Yellow-spotted Bell Frog) Conservation Advice 2019

Notifiable instrument NI2019–241

made under the

Nature Conservation Act 2014, s 90C (Conservation advice)

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## 1 Name of instrument

This instrument is the *Nature Conservation (Yellow-spotted Bell Frog) Conservation Advice 2019*.

## 2 Commencement

This instrument commences on the day after its notification day.

## 3 Conservation advice for the Yellow-spotted Bell Frog

Schedule 1 sets out the conservation advice for the Yellow-spotted Bell Frog (*Litoria castanea*).

Arthur Georges  
Chair, Scientific Committee  
1 May 2019

# Schedule 1

(see s 3)

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**ACT**  
Government

Environment, Planning and  
Sustainable Development



ACT Scientific  
Committee

# CONSERVATION ADVICE

## YELLOW-SPOTTED BELL FROG

### *Litoria castanea*

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#### CONSERVATION STATUS

The Yellow-spotted Bell Frog *Litoria castanea* (Steindachner, 1867) is recognised as threatened in the following jurisdictions:

International	<b>Critically Endangered</b> , International Union of Conservation of Nature (IUCN) Red List
National	<b>Critically Endangered</b> , <i>Environment Protection and Biodiversity Conservation Act 1999</i>
ACT	<b>Critically Endangered</b> , <i>Nature Conservation Act 2014</i>
NSW	<b>Critically Endangered</b> , <i>Biodiversity Conservation Act 2016</i>

#### ELIGIBILITY

The Yellow-spotted Bell Frog is listed as Critically Endangered in the ACT Threatened Native Species List under IUCN Criterion B — B1 and B2(a)(b)(i–v) and Criterion C — C2(a)(i–ii). The factors that make it eligible include an *extremely high risk of extinction in the wild* due to an extent of occurrence (EEO) and area of occupancy (AOO) of 4 km<sup>2</sup> (unpublished data, Department of the Environment and Energy (DoEE) 2017) based on the only sighting of this species since 1980 and the inability to locate the species over multiple decades suggests that the remaining population if still extant, is very small and likely contains fewer than 250 mature individuals. Continuing decline is inferred based on the ongoing threats of amphibian chytrid fungus and habitat degradation (TSSC 2017).

#### DESCRIPTION AND ECOLOGY

The Yellow-spotted Bell Frog is a large (53–85 mm snout-to-vent length) long-snouted hylid frog (Cogger 2014) belonging to the Australian Bell Frog complex—family Hylidae (NSW National Parks and Wildlife Service (NPWS) 2001). The back is dull olive to emerald green with scattered black spots and irregular bronze spotting and blotches. The skin on the back is warty. A pale green stripe runs down the centre of the back. The underside is white with glandular skin. The groin and hind side of the thighs are blue-green with large yellow or cream spots (TSSC 2017).



Yellow-spotted Bell Frog (David Hunter – NSW OEH)

The tympanum (ear drum) is dark and conspicuous. It has a pair of raised ridges that run down each side of the back (dorso-lateral folds) which are pale cream and also conspicuous (Robinson 1996). A narrow black stripe runs from the nostril, behind the eye, extending over the tympanum and bordering the dorso-lateral folds (Cogger 2014). The toes are fully webbed with toe discs narrower than the toe itself.

The advertisement call of the male Yellow-spotted Bell Frog is variable with no regular pattern. The call of the species is generally monophastic, with a sequence of several short pulsed notes (grunts) which are sometimes lengthened into short growls (Thompson et al. 1996).

The behaviour and breeding biology of the Yellow-spotted Bell Frog is presumed to be similar to other bell frog species (NPWS 2001). Breeding occurs in still or slowly flowing water bodies during warmer months following reasonable rainfall. In the South Eastern Highlands Bioregion, Osborne et al. (1996) reported the species calling at water temperatures ranging from approximately 13–18°C. Adults over-winter in hollow logs and buried in soil amongst the roots of fallen trees (Courtice & Grigg 1975). Individuals reach sexual maturity at three years and have a life expectancy of six years (Hero et al. 2004).

## DISTRIBUTION AND HABITAT

The Yellow-spotted Bell Frog has historically been recorded (Atlas of Living Australia (ALA) 2018)) in two separate biogeographical regions in south-eastern Australia: the New England Tableland Bioregion around Guyra and the South Eastern Highlands Bioregion around Lake George to Canberra and Bombala to Delegate (Heatwole et al. 1995; Osborne et al. 1996; NPWS 2001).

The species has not been recorded in the southern tablelands since 1980 and has not been recorded in the New England Tableland Bioregion since 1975 (Hero et al. 2006; NSW Scientific Committee 2009; Osborne et al. 1996). This indicates that the entire population of the species has undergone a very large and rapid reduction (NSW Scientific Committee 2009). The timing of the decline is uncertain, but has been estimated to have occurred between 1978 and 1981 (Osborne et al. 1996). The Yellow-spotted Bell Frog may be extinct in the wild, however, there is a possibility that some individuals have remained undetected as a result of insufficient survey effort (NPWS 2001; Hero et al. 2006).

The Yellow-spotted Bell Frog has been found in permanent ponds, swamps, lagoons, farm dams and the still backwaters of slow flowing streams, usually with emergent vegetation such as tall reeds or with overhanging grassy banks (White & Ehmann 1997a,b).

## THREATS

Threats to the Yellow-spotted Bell Frog are principally related to disease and habitat degradation and are detailed in the Commonwealth Conservation Advice (TSSC 2017). Threats include:

- amphibian chytrid fungus
- infection from myxosporean parasites
- habitat loss and degradation through clearing, trampling, fragmentation, altered hydrology, salinity
- small population sizes and population fragmentation
- chemicals
- climate change (temperature increase, extreme weather events e.g. cyclones, droughts).

Further details of threats are provided in the National Recovery Plan (NPWS 2001).

## MAJOR CONSERVATION OBJECTIVES

The species is considered to be locally extinct. The priority management objective in the ACT is to reduce the broad landscape threats that contributed to its local extinction. Reintroductions are not currently proposed but could be considered if broad-scale threats are managed and there is a need to re-establish wild populations in historical ranges.

## CONSERVATION ISSUES AND PROPOSED MANAGEMENT ACTIONS

Should the species be reintroduced into (or found in) the ACT, the following actions would be relevant (OEH 2018):

- control exotic fish in wetlands and creeks in the vicinity of populations
- control foxes and cats
- maintain natural water flows
- protect wetlands and creeks from erosion and sedimentation
- minimise the use of herbicides and pesticides in and adjacent to habitat
- retain fallen timber, rocks and other debris near wetlands and creeks
- protect wetlands and creeks from clearing or disturbance
- engage with landholders and land managers to implement sympathetic management and monitoring
- undertake captive breeding, both as insurance against threats to the wild population, and for future translocations and augmentation

## OTHER RELEVANT ADVICE, PLANS OR PRESCRIPTIONS

- Commonwealth Conservation Advice — Yellow-spotted Bell Frog (TSSC 2017)
- NSW Recovery Plan — Yellow-spotted Bell Frog (NPWS 2001)

## LISTING BACKGROUND

The Yellow-spotted Bell Frog was initially listed as Endangered on 19 January 2000 under the *Endangered Species Protection Act 1992* (Cwlth). This species was transferred from Endangered to Critically Endangered under the EPBC Act in 2019 following assessment of new information by the Commonwealth TSSC Committee that considered the species to have met the relevant elements of Criterion B: B1 and B2(a),(b)(i–v) and Criterion C: C2(a)(i–ii) for listing as Critically Endangered. In 2019, under the *Nature Conservation Act 2014*, the ACT Scientific Committee recommended that the Yellow-spotted Bell Frog be listed in the Critically Endangered category in the ACT Threatened Native Species List to align with the EPBC Act listing and be annotated as locally extinct in the ACT.

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## FURTHER INFORMATION

Further information on this or other threatened species and ecological communities can be obtained from Environment, Planning and Sustainable Development Directorate (EPSDD).

Phone: (02) 132281, EPSDD Website: <http://www.environment.act.gov.au/cpr>